



# CANSO Safety and Operations Forum 2020

Tuesday 10 November 2020

13:00-17:30 CET

# CANSO Safety and Operations Forum 2020

**Capacity versus Safety**  
**Talking about dependency**



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# Challenger accident, a little bit of facts

- STS 51-L (**Teacher in Space Mission**) January 28, 1986, when Space Shuttle Challenger broke apart 73 seconds into its flight
- Disintegration of the entire vehicle began after an **O-ring seal in its right solid rocket booster (SRB) failed at liftoff**. The O-ring failure caused a breach in the SRB joint it sealed, allowing pressurized hot gas from within the solid rocket motor to reach the outside and impinge upon the adjacent SRB attachment hardware and external fuel tank. This led to the separation of the right-hand SRB's aft attachment and the structural failure of the external tank. Aerodynamic forces promptly broke up the orbiter.
- Forecasts for January 28 predicted an **unusually cold morning**, with temperatures close to 31 ° F (−1 ° C).



# Production Pressure at NASA

According to the original planning, each of the 5 shuttles was designed for 100 starts within 10 years. In fact, by the end of the program, after 30 years, this only resulted in 135 flights in total.

Cost: Targeted \$ 200 / kg payload / Actual: \$ 16,000 / kg payload

Scheduled start on January 22nd

3 x delayed to January 26th due to a necessary 25 day period after a previous start.

Postponed to January 27th due to bad weather.

On this day postponed to January 28th due to a technical error in a microswitch and subsequent strong wind shear.

Weather report for the 28th: Temp. 31 ° F (-1° C)

Far outside of a tried and tested area and with great doubts about safety.

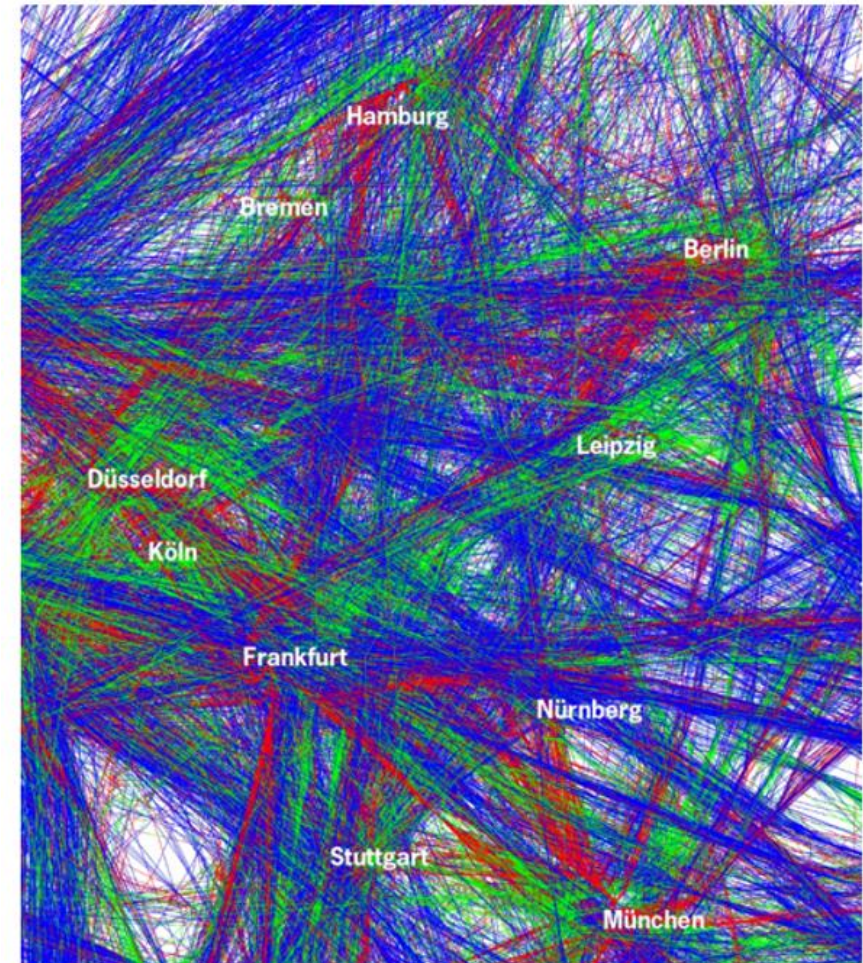
Management Decision to launch in the evening of the 27<sup>th</sup> despite the alerting facts.





# About Production Pressure in our “risky” business

1 Day in January 2018  
**Climb** Enroute **Descent**



# Capacity versus Safety - widespread beliefs

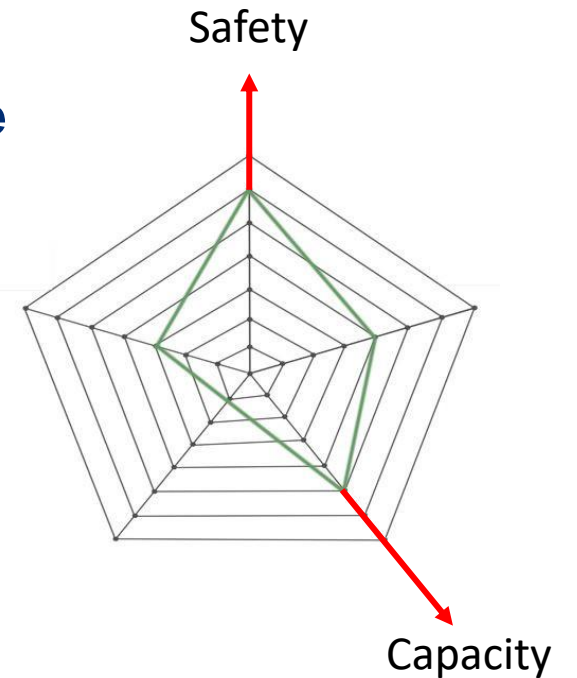


"capacity and safety have a **negative correlation**"

"its a **dilemma**:  
capacity over safety => disaster  
safety over capacity => "bankruptcy"

"it's a never-ending battle"

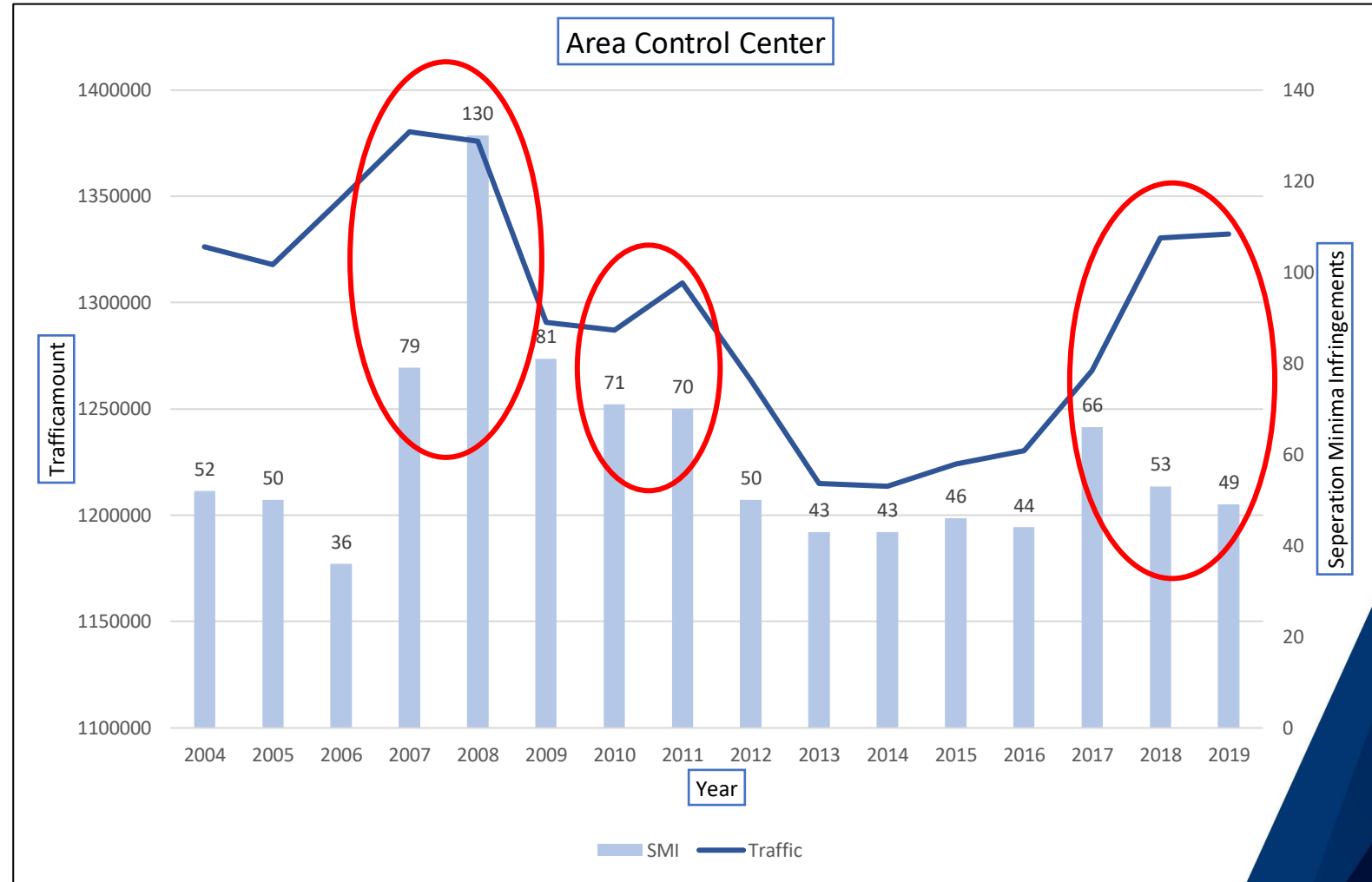
*Is this really so?*





# Capacity versus Safety – recent findings

- There is very **little empirical causal evidence** for high production pressure causing negative effects on safety.” (Simon D. Smith, 2018)
- “The relationship between safety and capacity proves to be more complex than a simple opposition.” (S. Dekker, 2013)
- Sometimes capacity increases and safety figures improve at the same time.



## S. Dekker: It's about culture.

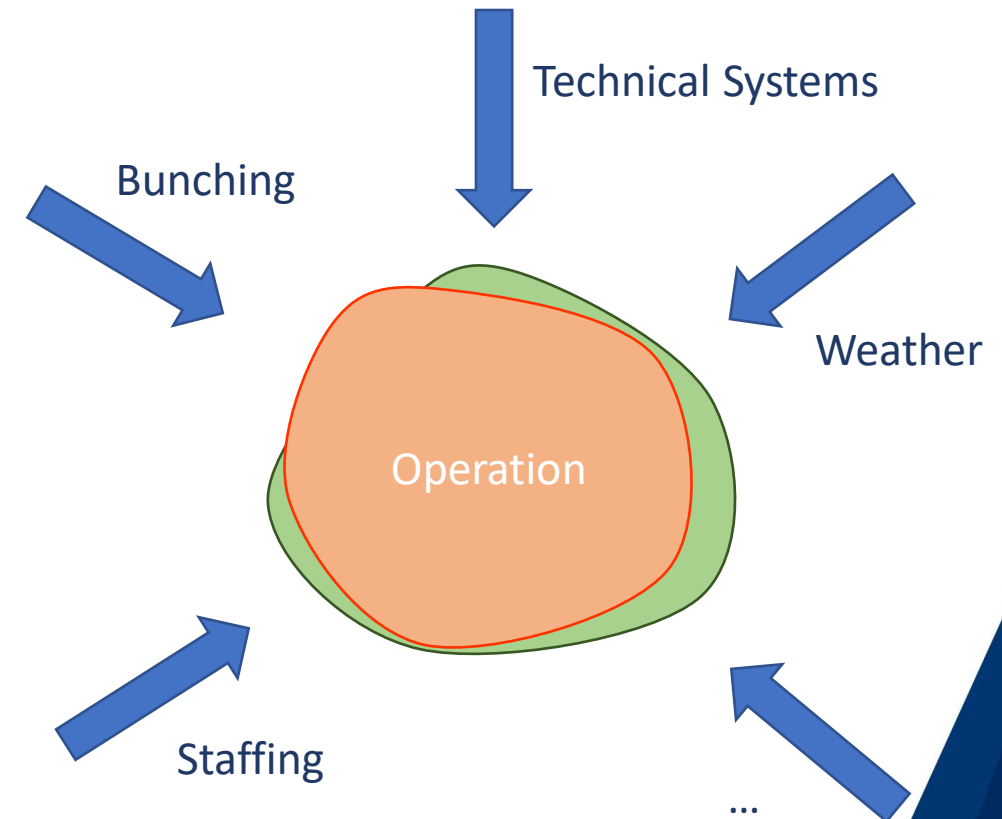
... Many people working in ATC have special characteristics which make these "front-line workers" willing and able to absorb and accommodate higher production pressure as a "normal" part of their operating culture.

... "can-do" culture / professional pride / professional satisfaction / uniqueness

... The goal conflict between safety and capacity is internalized and integrated by controllers, by shifts, by teams as a normal feature of their daily work.

# Safety and Investment

- Rules define our safe envelope for capacity depending on specific conditions.
- Safety rules will not be bent or stretched intentionally!
  - e.g. Slippage on final is not excepted!
  - ...
- Productivity is aiming for the edge for the safe operation.
- But in general: Safety does not have to be sacrificed for capacity.
- Safety and capacity correspond in a more particular way.
- **And most important: Safety requires its own investment. (Technology, Training, Support, Staffing, ...)**

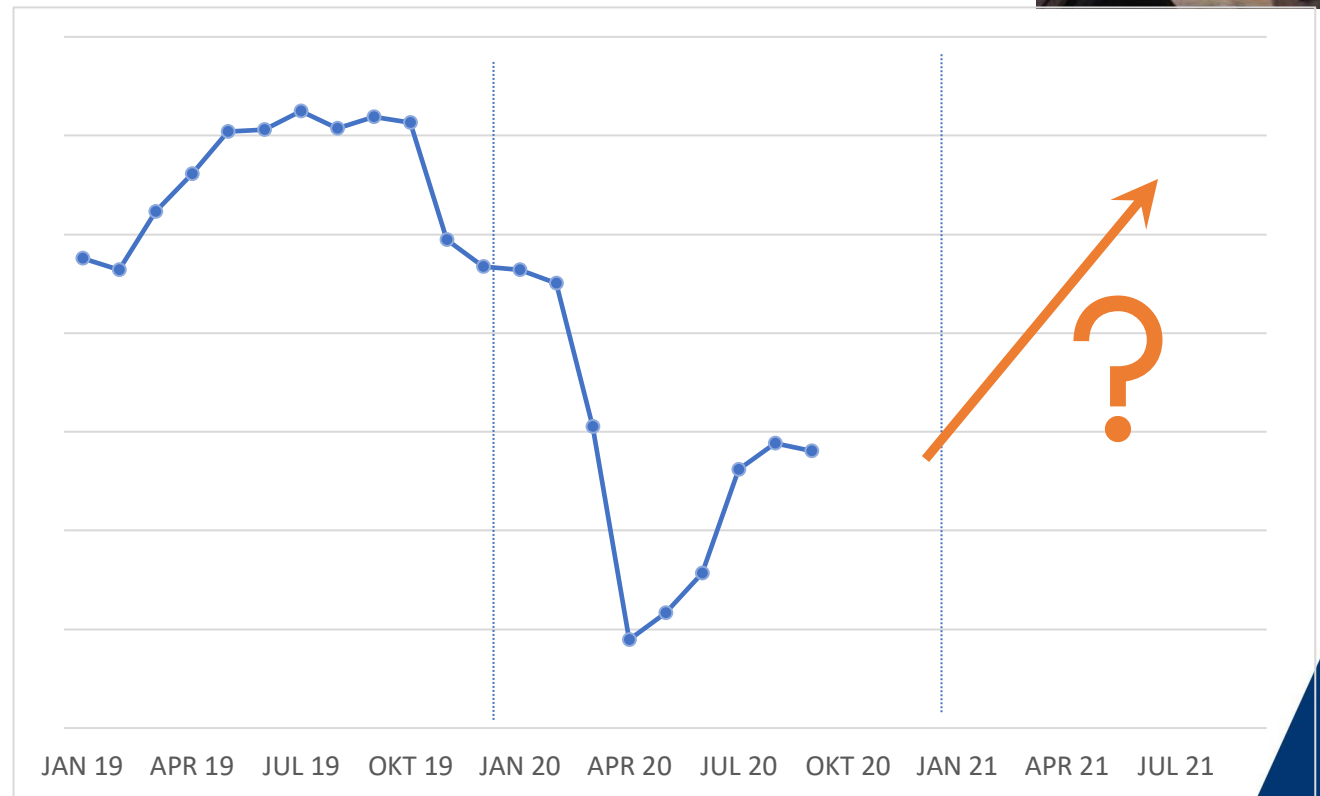


# Challenge of the near future

Since March 2020 **traffic decreased dramatically** due to the Covid-19 pandemic.

ATC-staff are no longer really used to high traffic load and certain **skills degrade step by step** if they are not used regularly.

And at the same time ANSPs have to **be prepared for a probable relatively rapid increase in traffic load** while no one can even roughly foresee the timeframe for that to happen.





# Thank you!



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# Osman Saafan

Director Corporate Safety & Security  
Management / CSO and Military Affairs,  
DFS Deutsche Flugsicherung GmbH and  
CANSO Safety Standing Committee  
(SSC) Chair






Has the safety landscape changed due to the pandemic?





A person wearing a VR headset is seated at a desk in a virtual reality environment. The desk has multiple computer monitors and speakers. The background is a vast, flat, and desolate landscape under a bright sky, suggesting a simulated environment. The person is wearing a dark jacket and glasses. The overall scene is dimly lit, with the primary light source being the screens and the simulated environment.

The argument  
can be made  
that the  
landscape of  
safety is in a  
constant state of  
change

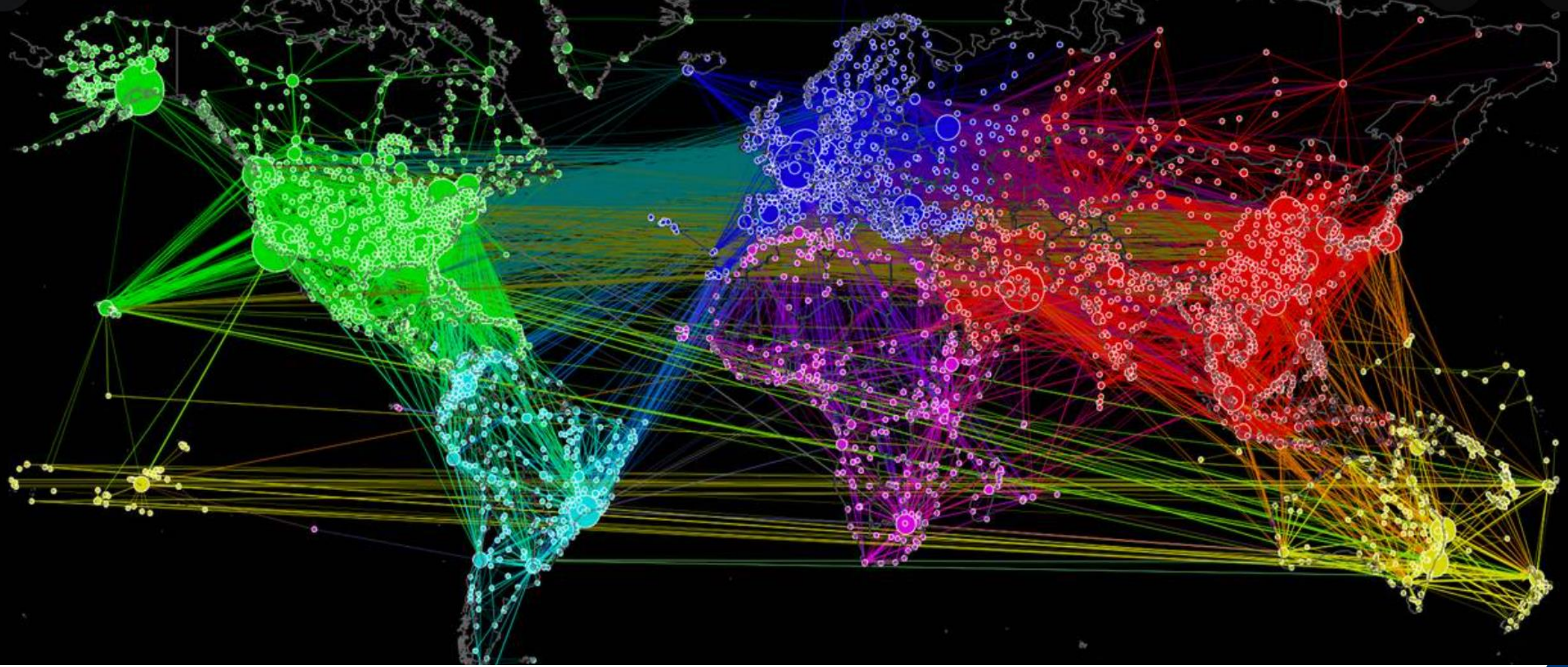
New  
technologies  
for ATC are  
always  
being  
introduced





New  
entrants  
into  
controlled  
airspace  
continue to  
emerge





New airspace design and routes of traffic are always under consideration





How do we  
reimagine not  
only the  
future of ATM,  
but also how  
we get to that  
future?



What are the safety tenets of automation?





Do we  
have the  
flexibility  
to adapt?

Change management and safety journey are the same destination; the details are what is different





# How to adjust?

First horizon (now):

- **Change is on its way**, make the change, the transition **safe**
- **Manage the risks**, traffic comes in waves and manifests itself in peaks
- **Downsizing / Right sizing - Manage the interdependencies**

Second horizon (tomorrow):

- **Automation**, move more quickly from **air traffic control to air traffic management**
- Increase **system resilience and flexibility**, increase adaptability to react faster and safely on fluctuality in air traffic and with the right size of services
- the answer to the question, whether our current working methods and tools are still **suitable to cope with the near future**,
- Supportive **regulatory framework** and **harmonized implementation**

**Aviation system-wide** approach and x-domain **collaboration**

# Two horizons!





# Working Together

- Understanding and managing safety risk today and tomorrow
- Setting the reference point for safety performance
- Collaborating with industry partners
- Creating environment to exchange information with Members and pertinent aviation stakeholders
- Working closely with other CANSO programmes, workgroups and regions
- Providing workshops, guidance, and support tailored to meet the needs of the community



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